

CHAPTER III

RESEARCH METHOD

This chapter consists of time research design, approach, population and sample, data collection procedure, instrument of the study, and data analysis procedure

A. Research Type

Considering the purposes of the research and the nature of the problems, the type of research was quantitative research that used cluster sampling. The research took two classes as experiment class and control class. Experiment class is sample class that gave treatment which the teaching learning process used peer tutoring method in teaching writing descriptive text. In the other hand control class is compare class that the teaching learning process did not use peer tutoring (used direct method) in teaching writing descriptive text.

B. Research Design

The design of this study is experimental design. Experimental design is a plan for an experiment that specifies what independent variables will be apply, the number of levels of each, how subjects are assigned to groups, and the dependent variable.¹ The writer used experimental design because the writer wanted to measure the effectiveness of peer tutoring method in teaching writing descriptive text.

The experimental class was given treatment teaching writing use peer tutoring method and the control class is not gave the treatment. After having

¹Donal Ary, *Introduction to Research in Education (Eight edition)*, United State: Wadsworth Cengage Learning), 2010, p. 641.

treatment, both class are gave post-test. Finally, the result of post-test is compare using T test. The scheme of this design is:

Table 3.1
The Scheme of the Experimental Research Design

Subject	Pre-test	Treatment	Post-test
E	Y1	X	Y2
C	Y1	-	Y2

Where;

E : Experiment class

C : Control class

Y1 : Pre-test

Y2 : Post-test

X : Treatment

C. Population and Sample of the Study

1. Population of Study

Population is defined as all members of any well-defined class of people, events or objects². It means population is all individuals for whom the data are collect. The population of this research is the seventh grade students of SMPN 3 SAMPIT. The seventh grade students of SMPN 3 SAMPIT are divided into 8 classes. There are 30-37 students each class. The total numbers of the population are 290 students

The population of the study will be all of the students SMPN 3 Sampit academic year 2014/2015. They are consist of:

² *Ibid*, p. 138

Table 3.2
The number of the Students in SMPN 3 SAMPIT

No	Class	Total
1	VII^R1	36
2	VII^R2	36
3	VII^R3	37
4	VII^R4	36
5	VII^R5	36
6	VII^R6	36
7	VII^R7	36
8	VII^R8	37
TOTAL		290

2. Sample Of Study

Sample is a part of population. According to Ary, “ Sample is a group selected from population for observation in a study.”³ Based on the population which was grouped into classes, the sample of this study was class or cluster. In this case, class was considered as a unit or group. In this study, there was two sample based on purposive technique. The sample was class VII^R1 and VII^R2. Class VII^R1 was as experimental class, VII^R2 was as control class was as experimental class. Whereas VII^R3 will be as try out class. Classes that were considering having similar number of students and similar writing ability who representative whole students’ writing ability were chosen.

³*Ibid.*, p, 649.

Table 3.3
The Number of Sample

No.	Classes	Group	Number of Students
1.	VII ^{R1}	Experimental	36
2.	VII ^{R2}	Control	36
The Total Number of the Students			72

D. Instrument of the Study

The data were very important in the study. They are needed to supported prove the study itself. This research can be helped by them in order to find the aims of the study. They are to measure the effectiveness of peer tutoring method toward the students' writing ability in descriptive text of the seventh grade students at SMPN 3 Sampit. In this study, a test is used to collect the data because the students' writing score can be known by using test.

1. Test

Test is a set of questions or exercises and other tools which are use to measured skill, intelligence, knowledge, and ability those are hadby individual or group.⁴ This method is used to get data about score of the pre-test and post-test that was given for both of groups. The test in this study is writing test. The students was given a free chance to think as much as possible. They could freely express and organize their ideas in written form.

⁴*Ibid*, p. 6.

In the study, the students were assigned to write descriptive text based on the picture. They ask to describe the picture use “ there is” and “there are”. The test do twice, they are pretest and posttest in experimental class and control class. The pretest was taken at Thursday, August 13, 2015 at 08.20 – 09.00 in experimental class and Thursday, August 13, 2015 at 10.50 – 11.30 in control class, and the posttest was taken at Tuesday, September 1, 2015 at 10.50-11.30 in experimental class and Thursday, September 4, 2015 at 10.50-11.30 in control class. The results of writing test that assigned for experimental and control class showed that the students who were taught using the peer tutoring method got higher score than students who were taught without using peer tutoring method.

For collecting the data, uses some steps in the procedure as follows:

1. Observes the class
2. Determined the class into experimental group and control group.
3. Gave Pre-Test to experimental group and control group
4. Gave treatment to experimental group that is taught by peer tutoring method
5. Gave Post-Test to experimental group and control group.
6. Gave scores to the data from experimental group and the control group
7. Started to analyze the obtain data from the pre test and post test using t test.
8. Interpreted the data analysis result

9. Concluded the activity of the study whether the peer tutoring method gave effect to the students' scores in writing descriptive text or not, based on the obtain data.

The procedures of collecting the data are as follow:

Table 3.4. Data Collecting Procedure

No	Source of Data	Instrument	Data Needed
1.	Students	Test	Students' score of the pretest and post test.
2.	Teacher and students	Field note	Learning process in class during use peer tutoring method in writing teaching descriptive text.

2. Documentation

Some documents were collected from the place of study. The documentation is used to collect the data. Using the document would help the writer to describe the situation of school. The data that would be collect in this research are:

- a. Numbers of students of seventh grade students at SMPN 3Sampit.
- b. The result of student score at teaching writing in Descriptive text.
- c. The curriculum uses at SMPN 3 Sampit.

E. Research Instrument Validity

Ary and et al. state validity is defined as the extent to which scores on a test enable one to make meaningful and appropriate interpretations.⁵ Validity is the most important consideration in developing and evaluating measuring instruments. Historically, validity is defined as the extent to which an instrument measured what it claimed to measure. The focus of recent views of validity is not on the instrument itself but on the interpretation and meaning of the scores derive from the instrument.⁶ Three types of validation are important in the role as a classroom teacher: content validity, face validity, and construct validity.⁷

1. Content Validity

This kind of validity depends on a careful analysis of the language being test and of the particular course objectives. The test should be so construct as to contain a representative sample of the course, the relationship between the test items and the course objectives always being apparent.⁸

In this study, essay test was used for students. It is useful to measure their writing ability. The material should be test is about descriptive text, it contains generic structure and language features. The students in this research write about descriptive text from essay test instruction, so the test really measure the writing descriptive text ability of the students.

⁵Donal Ary, Lucy Cheser Jacobs, Chris Sorensen, and Asghar Razavieh, *Introduction to Research in Education Eight edition*, p. 224.

⁶*Ibid.*, p. 225

⁷H. Douglas Brown, *Teaching by Principles an Interactive Approach to Language Pedagogy* (Second Edition), p. 388.

⁸J. B. Heaton, *Writing English Language Tests*, London: Longman Group Limited, 1975, p. 154

Table 3.5.
The Signification of Content Validity

Indicator of the Study	Type of Test
Students are able to write a text in form of descriptive text based on the components of the descriptive itself and describe something use “:there is” and “there are”	Writing test

2. Face Validity

The types of face validity, if the test items look right to other testers, teacher, indicators and test.⁹ The types of test items, which would uses in this research, can be suitable to the others at the same level is Junior High school.

For face validity of the test items as follow:

- a. The test used written test in writing test instruction.
- b. The evaluation by written test based on scoring system.
- c. Kind of the written test is writing descriptive text.
- d. The Language of items uses English
- e. The written test is suitable with syllabus of English writing for students at SMPN 3 SAMPIT.

⁹ J. B. Heaton, *Writing English Language Test*, 1975, p. 153.

3. Construct Validity

If a test has construct validity, it is capable of measuring certain specific characteristics in accordance with a theory of language behavior and learning.¹⁰

Table 3.6.
Syllabus of Writing Text

Basic Competence	Material	Indicator	Evaluation	
			Type	Form
Mengungkapkan langkah retorika dalam teks tulis fungsional pendek sangat sederhana dengan menggunakan ragam bahasa tulis secara akurat, lancar dan berterima untuk berinteraksi dengan lingkungan terdekat	Teks tertulis berbentuk teks fungsional pendek sederhana berbentuk deskriptif	Mampu menulis teks fungsional pendek sederhana berbentuk deskriptif	Menulis	Subjectif tes

In this study, uses inter-rater method (test of validity). Inter-rater is two raters who score the students' writing to get the score compositions as possible. Product moment correlation was used as the formula to calculate the validity from the test result.

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

Where:

r_{xy} : Index Correlation Number "r" Product Moment.

N : Number of Cases.

¹⁰J. B. Heaton, *Writing English Language Test*, 1975, p. 154.

ΣXY : Multiplication Result between score X and Score Y.

ΣX : Total Value of Score X.

ΣY : Total Value of Score Y.¹¹

The distribution of t_{table} at alpha 5% and the degree of freedom (n-2) with the measurement of validity using these criteria:

$$\begin{aligned} r_{xy} > r_t &= \text{Valid} \\ r_{xy} < r_t &= \text{Invalid} \end{aligned}$$

To know the validity level of the instrument, the result of the test was interpreted to the criteria or the correlation index as follows:¹²

0.800 – 1.000 = Very High Validity

0.600 – 0.799 = High Validity

0.400 – 0.599 = Fair Validity

0.200 – 0.399 = Poor Validity

0.000 – 0.199 = Very Poor Validity

F. Instrument Reliability

Reliability is a necessary characteristic of any good test for it to be valid at all. A test must first be reliable as a measuring instrument. It is the degree of consistency with which it measures whatever it is measuring. Similarly, Sekaran state that reliability is the extent of consistency and stability of the measuring instrument. In this case, to score composition as fairly and consistently as possible. Reliability refers to the consistency with which a test measure whatever it measure. In this study, reliability of the writing test

¹¹Anas Sudijono, *Pengantar Statistik Pendidikan*, Jakarta: PT RajaGrafindo Persada, 1997, p. 206

¹²Ridwan, *Metode dan Teknik Menyusun Thesis*, Bandung: Alfabeta, 2004, p. 110

mainly focuses on the rater reliability since the score are obtained from the judgment of two different raters. Here, the consistency in rating score is very important in measuring the students' writing skill. The consistency can be achieved through rater training.

In rather reliability, there are inter-rater reliability and intra-rater reliability. Inter-rater reliability is the consistency of the judgment of several raters on how they see a phenomenon or interpreted the responses of the subject. It indicates accuracy in scoring composition of two different raters. Meanwhile, intra-rater reliability referred to the consistency of the rater in scoring the same paper at two different points of time. It points out an individual accuracy in scoring a particular composition.

In this study, used inter-rater reliability; two raters would employed to score the students' writing. Two raters are conducted this study self and one of English teacher of SMPN 3 SAMPIT.

To obtain inter- rater reliability, the score of two raters were correlated using SPSS program. Then the interpretation of coefficient correlation was got, whether they belong to high, moderate, or positive weak negative inter rater reliability category. The obtained coefficient should indicate that the students' writing products both using picture media and without using picture media have achieved the acceptable level of reliability. Calculation result of r was compared with r_{table} by 5% degree of significance with $df=N-2$. If r was higher than r_{table} so it meant reliable and if r was lower than r_{table} so it meant unreliable.

Table 3.7
Inter-Rater Coefficient Correlation and Interpretation

Correlation Coefficient	Interpretation
.90 to 1.00 or -.90 to -1.00	Very high positive or negative correlation
.70 to .89 or -.70- to -.89	High positive or negative correlation
.50 to .69 or -.50 to -.69	Moderate positive or negative correlation
.30 to .49 or -.30 to -.49	Low positive or negative correlation
.00 to .29 or -.00 to -.29	Little if any correlation

In this study. Inter –rater was used to correct the student’s answers. The scoring rubric for the measurement as follow:¹³

Table 3.8. Scoring Rubric of Writing

Components	Score	Level	Criteria
Content	27-30	Very Good to Excellent	Very good in mastering the problem; the content is very solid; complete and comprehensive; very appropriate with the problem and title.
	22-26	Fair to Good	Mastering the problem; the content is adequate; almost complete and comprehensive; appropriate with the problem and title, but it is less detail.
	17-21	Poor to Average	The problem mastery is limited; the content is not adequate enough; less complete.
	13-16	Very Poor	Does not master the problem; the content is not sufficient; not relevant with the title and problem; there is not enough material to evaluate.

¹³M. Soenardi Djiwandono, *Tes Bahasa Pegangan Bagi Pengajar Bahasa*, Malang: PT.Indeks, 2008, p. 62.

Organization	18-20	Very Good to Excellent	Very harmonious; the main ideas are expressed and developed clearly, organized well, logical order; close relationship among parts (cohesive).
	14-17	Fair to Good	Less harmonious; the main ideas are not organized well; less developed; logical order but less comprehensive.
	10-13	Poor to Average	Not harmonious; the main ideas are not irregular; the sequence is less logically; the main ideas are less developed.
	7-9	Very Poor	Does not communicate; no organized; there is not enough material to evaluate.
Grammar	22-25	Very Good to Excellent	Very effective in using simple and complex sentences; less errors in using grammar, sequence sentences, phrase and word form, preposition, etc.
	18-21	Fair to Good	Effective in using simple sentences; some difficulties in using complex sentences; some errors in using grammar, sequence sentences, phrase and word form, preposition, etc.
	11-17	Poor to Average	Error and difficult in using simple and complex sentences; most errors in using grammar, sequence sentences, phrase and word form, preposition, etc.
	5-10	Very Poor	Almost not mastering the grammar; full errors in grammar; cannot be understood; not enough

			material to evaluate.
Vocabulary	18-20	Very Good to Excellent	Repertory of words is wide; the chosen and use of exact and effective words; mastery in word form and formation.
	14-17	Fair to Good	Repertory of words is enough; the chosen and use of words occasional not exactly, but the meaning not obscured.
	10-13	Poor to Average	Repertory of words are limited; most errors in choosing words; the meaning is hazy and obscured.
	7-9	Very Poor	Repertory of words are very limited until can not communicate the meaning; less informative to evaluate.
Punctuation	5	Very Good to Excellent	Comprehence to the punctuation; less error in spelling, punctuation, the use of capital letter, arrange of paragraph.
	4	Fair to Good	Occasional error in applying the rule, but not hazy the main content and meaning.
	3	Poor to Average	Most error in applying the rule of the spelling and writing; difficult to read the writing; main content and meaning are hazy.
	2	Very Poor	Does not master the rule of the spelling and writing; full error in spelling, punctuation, the use of capital letter, arrange of paragraph, difficult to read the writing; not enough information to evaluate.

G. Data collection Procedure

In this study, some procedures were to collect the data. The procedures consisted of some steps as follows:

1. Observed the school by headmasters' permission.
2. Asked the class with the English teacher who taught English in the class that become the class of research:
3. The number of the class.
4. The number of students.
5. Determined the class into experimental group and control group.
6. Gave pre test to the experimental group and control group.
7. Taught the experimental group using peer tutoring method
8. Taught the control group without using peer tutoring method.
9. Gave post test to the experimental group and control group.
10. Gave scores to the data from experimental group and the control group.
11. Started to analyze the obtain data from the pre test and post test using t test.
12. Interpreted the data analysis result.
13. Concluded the activity of the study whether the peer tutoring gave effect to the students' scores in writing descriptive text or not, based on the obtain data.

The procedures of collecting the data are as follow:

Table 3.9.
Data Collecting Procedure

No	Source of Data	Instrument	Data Needed
1.	Students	Test	Students' score of the pretest and post test.
2.	Teacher and students	Field note	Learning process in class during use peer tutoring method in writing teaching descriptive text.

2. Data Analysis

To analyze the data has been collects, some procedures were used in this study:

1. Gave test to the students of the seventh grade students at SMPN 3 SAMPIT.
2. Collects the data of the students' test result.
3. Tabulates the data into the distribution of frequency of score table, then looking for the mean, median and modus of students' score, standard deviation, and standard error of experiment group and control group.

Formula of mean, median and modus: ¹⁴

a. Mean

$$Mx = \frac{\sum fx}{N}$$

Where:

Mx : Mean

¹⁴ Hartono, *Statistik Untuk Penelitian*, Yogyakarta: Pustaka Belajar, 2011, p. 33.

$\sum fx$: Total result product between each score with frequency

N : Number of case

b. Median

$$Mdn = U + \frac{\frac{1}{2}N - fkb}{fi} \times i$$

Where:

Mdn : Median

N : Number of case

fkb : Cumulative frequency located in under interval contain median

fi : Authentic frequency (frequency of score contain median)

i : Interval class

c. Modus

$$Mo = 1 + \frac{fa}{fa + fb} \times i$$

Where:

Mo : Modus

Fa : frequency located in above interval contain modus

Fb : frequency located in under interval contain modus

i : Interval class

Formula of standard deviation and standard error: ¹⁵

d. Standard Deviation

$$SD = \sqrt{\frac{\sum fx^2}{N}}$$

Where:

¹⁵*Ibid*, p. 60.

SD : Standard Deviation

i : Interval

N : Number of students

e. Standard Error

$$Sem = \frac{sd}{\sqrt{n-1}}$$

Where:

Sem : Standard Error

Sd : Standard Deviation

N : Number of students

4. Calculates normality and homogeneity.

a. Normality

It is used to know the normality of the data that is going to be analyze whether both groups have normal distribution or not. Chi square is used here:¹⁶

$$\chi^2 = \sum \left[\frac{(f_o - f_h)^2}{f_h} \right]$$

Where:

χ^2 = Chi square

f_o = frequency from observation

f_h = expected frequency

b. Homogeneity

¹⁶Sudjana, *Metode Statistika*, Bandung: Tarsito, 1996, p. 273.

It is used to know whether experimental group and control group, that are decided, come from population that has relatively same variant or not. The formula is:¹⁷

$$F = \frac{\text{Bigger Variant}}{\text{Smaller Variant}}$$

Where:

F : Frequence

The hypotheses in homogeneity:

$F_{\text{value}} \leq F_{\text{table}}$, means both of variants are homogeneity.

$F_{\text{value}} > F_{\text{table}}$, both of variants are homogeneity.

5. Calculates the data by using t-test to test the hypothesis of the study. To examine the hypothesis, t-test formula was used as follows:¹⁸

$$t_o = \frac{M1 - M2}{SEm1 - m2}$$

Where:

M1-M2 : The difference of two mean.

SEm1-m2 : The standard error of difference between two mean.

To know the hypothesis is accepted or rejected using the criterion:

If $t\text{-test} \geq t_{\text{table}}$, it means H_a is accepted and H_o is rejected.

If $t\text{-test} \leq t_{\text{table}}$, it means H_a is rejected and H_o is accepted.

6. Interprets the result of t-test. Degree of freedom (df) was accounted with the formula as follows:¹⁹

$$df = (N1 + N2 - 2)$$

¹⁷*Ibid.*, p. 250

¹⁸Anas Sugiono, *Pengantar Statistik Pendidikan*, Jakarta: Rajawali Press, 1978, p. 284

¹⁹*Ibid.*, p. 285

Where:

df : Degree of freedom

N1 : Number of subject group 1

N2 : Number of subject group 2

2 : Number of variable

7. Discusses and conclude the result of data analysis.

H. Summary

To sum up, the steps in collecting, analyzing, and testing hypothesis can be described below. In the first step, divides the subject into experimental and control group. Second step, gave pre-test to the students in order to know the early ability of the subject. Third step, gave treatment to experimental group using peer tutoring method and the control group is taught using direct method. Fourth step, gave post-test to both groups in order to see the differences of both. Fifth step, before testing the hypothesis, calculates normality and homogeneity test using SPSS. Sixth step tests hypothesis to answer the research problem using t-test formula with manual calculation and SPSS. Seventh step, interprets the analysis result. Eighth step, discussion on the results is made to clarify the finding. Lastly, the conclusion